The National Association of Corporation Schools

Bulletin

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ORGANIZING EDUCATIONAL COURSES

The Editor of the *Bulletin* has been requested to prepare an article defining how educational courses can be inaugurated by corporations. Careful analysis of courses now being used by Company Schools indicates that, like Topsy, they "just growed." There does not seem to have been any well-defined plan or preconceived ideas of just what an industrial educational course should consist of. Most of the Company Schools have had an humble origin and the courses have been enlarged, defined and perfected as the need became apparent. In a general way, however there are three classifications which should be given consideration by corporations contemplating the organization of educational courses on behalf of their employes.

First—Health. Too long we have neglected the commercial value of healthful employes, and it is now generally recognized that health is a subject which can be taught, and that the physical condition of employes may be materially raised and kept on a much higher standard than now prevails throughout industry. Such a course can be instituted by the selection of proper textbooks on the subjects of health, recreation, hygiene, proper food, air and light and by bringing into the work recognized physicians who may be induced to prepare and give lectures covering the subjects enumerated.

Second—Vocational studies. Fitting the right person into the right position. It has long been recognized that one does best what they like best to do, but until recently, little attention has been paid to the natural tendencies of the individual. The average boy has found his place in industry through a "Want Ad." "Boy Wanted" sign in a window or a "tip" given by some friend that a job could be had at a certain place. And once the boy, or girl either for that matter, has found a position very little

attention has been given to the question of whether or not the qualifications of the boy or girl fit them for the position. If the boy or girl failed to "make good" they were discharged and a new person sought in their place. Industry, however, is now coming to understand that one of the greatest aids to individual as well as collective efficiency is careful attention to vocational guidance.

Third—Knowledge. A portion of the knowledge that an employe should possess is, of course, general in character. Where it is possible to select employes already possessing a grammar school or high school training there is no argument as to the value of such training. But this is not always possible. Many of the apprentices who go into the shops and the manufacturing departments are of foreign birth, possessing little, if any, education. Here we have a distinct problem, and one that must be dwelt with as separate from the movement as a whole. But assuming that the average boy or girl who enters industry is possessed of at least a common school education, a good procedure in establishing industrial or company school courses is to make a careful selection of books to be kept in the school library, the text of which deals directly with the subject of "Man Building," and which has a broadening tendency. Psychology should not be neglected, especially in the training of sales force.

Having determined a course designed to supply the broader general knowledge and having selected suitable text-books which should embrace the study of Courtesy, Self-Development, The Value of Specialized Knowledge, History and Development of the Industry in which the boy or girl is to enter, Effective Speaking and Business Letter Writing, The Basic Principles of Salesmanship, Fundamental Laws Underlying Industry, Personal Attitude, Business Imagination and similar topics, a compilation should be made, or a course prepared, dealing directly with the individual problems of the corporation. Such, for example, as scope and policy of the corporation's business and careful analysis of company organization and detailed studies of the problems which are peculiar to their line of industry so that the telephone operator, the junior clerk and even the office boy shall have a complete understanding of the Company's problems, its policies, methods and the field to which the particular corporation confines its business. There has been a marked tendency to look upon these latter or specialized courses as sufficient to cover the entire field of industrial education. It is, however, apparent that the employe so trained has been narrowed in viewpoint

or vision to such an extent as to prevent the larger conception and to materially reduce, if not destroy, initiative and perception.

The Secretary's office of The National Association of Corporation Schools will gladly cooperate with any industrial institution desiring to organize educational courses on behalf of its employes. The only requirement is that such institution shall become a member of our Association. There is no charge for such service to our members.

A gathering of all the Indians living in Arizona is being arranged for the near future. To interest the bureau of Indian affairs, the industrial education of the Indians will be featured. The contrast between the Indian of to-day and his wholly savage progenitor will be shown and students of Indian schools will show how and what they learn.

Of the total 4,669,162 white population in New York City in 1910 the English-Celtic languages were the mother tongue of 21 per cent, according to the Census Bureau. Next came the Yiddish-Hebrew, with 19 per cent; Germany, 18 per cent; Italy, 12 per cent; Poland, 3 per cent, and France, Sweden and Magyar, 1 per cent each.

The market value of a half dozen blocks along lower Broadway, New York, or some of Fifth Avenue's blocks would more than equal the worth of the entire farming area of New Hampshire.

Never before in the history of British commerce was such a large volume of business transacted as last year.

Philadelphia has 9,568 factories, employing 358,218 persons and paying $200,933,659 in salaries and wages.

The Board of Education of Philadelphia has appointed a permanent vocational director.

Only six States are now without a compulsory education law.

INDUSTRIAL EDUCATION DISCUSSED AT BUFFALO, N. Y.

From American Industries

Before two hundred members of the business men's associations of Buffalo, N. Y., at the annual banquet of the central council, on February 24th, H. E. Miles, chairman, Committee on Industrial Education, National Association of Manufacturers, scathingly arraigned the common school system of the United States.

Mr. Miles denounced the system which turns loose boys and girls at the age of fourteen when the law decrees school attendance is no longer compulsory and leaves them unfitted for the battle of life. He made an eloquent plea for the "continuous school."

"We have invested $1,000,000,000 in the common schools of this country," said he, "and for running expenses we spend half a billion more annually, and yet one of the greatest German educators has said 'Nowhere in the world, except in Russia, have I seen such neglect of childhood as in England and in the United States.'"

"Here in Buffalo," said Mr. Miles, "some 4,500 little children, fourteen years old, break out of your school doors beccause the law says they don't have to stay in school after that age. On leaving they are unable to use their bodies, minds and hands in a good human way.

"You have approximately 9,000 children between the ages of fourteen and fifteen on the streets, idle or in a blind alley, hopeless and with no prospect of betterment. In New York there are 80,000 such children."

Statistics were given to show that 1,000,000 of all the children attending the public schools leave between the fifth and sixth grades annually to join the ranks of the ignorant, the uneducated, the purblind and virtually hopeless. In contrast the speaker called attention to what is being done by wide-awake European countries. Mr. Miles contended the value of human resources going to waste in the United States was between $200,000,000,000 and $250,000,000,000.

An extreme measure of industrial education was advocated by John L. Walker, president of the Illinois Federation of Labor, in a recent address before the mining engineering class of the University of Illinois

THE NATIONAL ASSOCIATION OF CORPORATION SCHOOLS—A FACTOR IN ALLEVIATING INDUSTRIAL UNREST

By E. J. Mehren

Were it not for the buoyant optimism characteristic of American men of affairs pessimism would constantly reign in industrial, commercial and transportation circles. Every line of activity is constantly being menaced by industrial unrest in one of its many forms. Discontent shows itself chiefly in labor troubles, but those who are close to the management of large enterprises see also some hidden, but nevertheless serious, consequences. Inefficiency, lack of interest in the welfare of the business, indifference as to the employer's property, unwillingness to make even the least sacrifice for the good of the enterprise—all are effects of this industrial unrest.

Its seriousness has resulted in intensive study on the part of manager, educators, publicists, sociologists. No general panacea has been found, but many agencies have been established for the betterment of unjust and improper conditions, and of the relations between employer and employe. On one point, however, all students of the subject agree, that education is the only ultimate solution—education not along present standard lines, but of a kind adjusted to the needs indicated by a study of present industrial conditions. While it is generally conceded that much can be done in the way of vocational education, opinion is almost as decided that the corporations will always find it necessary to a considerable extent to conduct courses of their own.

The relation of the corporation school to industrial unrest is almost self-evident. It opens up to backward employes avenues for advancement otherwise closed. With advancement comes increased remuneration and its long chain of desirable consequences —higher standards of living, improved physical condition, greater contentment. Opportunity for advancement stimulates ambition, which is truly a mental tonic and can more nearly make over an individual than any other stimulus in the psychological glossary. It broadens the employe's horizon. Instead of his view being restricted to the single operation which he performs, he learns its relation to other operations and to the whole. He gets a glimpse, perhaps, of problems outside of his own general department—manufacturing, sales or financial. He is raised to a new plane. The task formerly dull is now an element in a great work. Shop or office life takes on a new meaning.

Are these idle words? imaginative flights? Ask Yale & Towne, the Pennsylvania Railroad, The New York Edison Company, the National Cash Register Company, R. R. Donnelley & Sons Company—to name only a few. They have vigorous corporation schools. They are backing their conclusions, based on experience, with larger and larger expenditures every year.

If this, then, is so important a movement, industrial, transportation and commercial managers, educators, sociologists and publicists cannot afford to be ignorant of it. The interests of the managers are immediate. Lucky—and rare, too—are they if industrial unrest is not to-day one of their gravest problems.

Educators must be informed as to the activities of the corporation school, for the publically supported vocational and continuation schools are evidence that the corporation's needs are going to influence very strongly our future educational development. The school system will need to dovetail with the corporation school, and from the latter can be most certainly learned the educational needs of the industries.

Sociologists will evaluate the movement, analyze it, compare it with other remedies, trace out its relations to welfare work, legislation, housing and all the other measures proposed for industrial unrest. Publicists, especially those connected with the technical and trade press—the business press, it might better be called —are seeking constantly for ideas that will benefit their readers, the manufacturers, merchants and public utility officials. For that reason they have devoted much thought and space to industrial conditions, to corporation schools, to the training of salesmen, shop employes, office help. Progress now is especially rapid, and they will have need for following with greater care than in the past the coming development of the corporation school.

The National Association of Corporation Schools was organized by the corporations in order to secure an exchange of ideas, to profit by each other's successful experience, to avoid pitfalls by learning of failures. To its conventions come directors and teachers of corporation schools, and the general officers of the companies. Its proceedings, therefore, are the storehouse of all the accumulated experience of these schools. Here is set down the progress of the movement. Here are learned its achievements, its future, its probable influence on industrial unrest. To it, therefore, must come the manager, the educator, the sociologist, the publisher. Here will they find the data they need for their respective purposes.

Realizing this the Association has established a Class C membership, open to all who are in sympathy with the objects of the Association. They are entitled to attend the convention sessions, receive a copy of the proceedings, are called upon for committee service in company with industrial specialists, and receive at intervals during the year miscellaneous publications indicating the progress of this and similar movements.

It is not expected, of course, that officers of industrial, commercial and transportation companies will permanently remain Class C members. Class A membership, which gives them a voice in the management of the Association, is open to them. Many, however, not ready for this larger step, already taken by firms with an aggregate capitalization of over two billion dollars, will find in Class C membership a first step through which they can learn of the work and the value of the Association.

The progress already made by the Association in its eighteen months of existence has conclusively demonstrated its need, its influence and its pronounced success. Affiliation with it need not be urged upon those who have at heart the solution of the industrial unrest problem.

WILL STUDY GIRLS WHO ENTER INDUSTRIAL LIFE

John C. Frazee, newly appointed chief of the bureau of vocational education and guidance in the public schools of Philadelphia, will devote his attention to the study of problems affecting girls as well as boys who are about to enter industrial and commercial fields.

Mr. Frazee has not yet announced his definite plans for the operation of the bureau, but in the report of a study of vocational education recently made for the Public Education Association of Philadelphia Mr. Frazee calls attention to the necessity of avoiding any discrimination against either sex in training children for their life work. It was this report, regarded as a masterpiece by leading educators, that virtually won the office for the new chief.

The establishment of the new bureau is one of the most progressive steps taken in recent years by the board of education. The creation of a separate department of the school system, to be devoted solely to the preparation of children for definite occupations, was the result of nation-wide agitation on the part of educators and sociologists.

MUSEUM OF PEACEFUL ARTS FOR INDUSTRIAL EDUCATION

As soon as a site can be obtained and plans completed there will be built in New York a Museum of Industrial Arts that will be the most comprehensive institution of its kind in the world. Already $1,500,000 has been pledged for the building and equipping of such a museum, and the names of those behind the movement are sufficient assurance of its success.

The museum will consist of several buildings which will be devoted to the exposition of permanent exhibits in the following industrial and peaceful arts: Electricity, steam, astronomy and navigation, safety appliances, aviation, mechanical arts, agriculture, mining, labor, efficiency, historic records, health and hygiene, textiles, ceramics and clays, architecture, scenic embellishment, gardening, roads and road building materials, commerce and trade, printing and books.

There will also be a library building and a building which will contain a hall for popular assembly, with rooms for committee meetings, lectures, and other purposes.

STREET CLEANING SCHOOL

For the purpose of increasing the efficiency of his force, John T. Fetherston, Street Cleaning Commissioner of New York, announces that he intends to establish a school of instruction for cleaners and drivers of the department. He declared that he expects eventually to obtain a building and staff of instructors for this purpose.

"We have decided that such a school is essential," he said. "The aim will be to determine the one best method of cleaning the streets and make that the standard. At present each district is using a different method. Every superintendent has his own ideas and the men have theirs.

"Many drivers are ignorant about horses and many laborers do not know how to handle a shovel."

WHAT IT COSTS TO EDUCATE

According to a report by Controller Prendergast, of New York City, it cost the city $38.72 last year for each grade pupil in the public schools, $102.59 for each high school pupil and $150.46 for each vocational school pupil.

FREE TUITION FOR YOUNG MEN URGED

Calling attention to the lack of skilled mechanics of American birth in this country and the need of properly training the youth of the land in manual trades, the General Society of Mechanics and Tradesmen, of No. 16 West Forty-fourth Street, New York City, now in the one hundred and twenty-ninth year of its activity, is taking steps to increase its scholarships so that every youth who desires it may have free opportunity to acquire proficiency in the use of mechanics' tools.

The society was organized on November 17, 1785, by twenty-two representative mechanics, to render aid to members in case of illness or distress and to care for the widows and orphans of deceased mechanics. The society was incorporated March 14, 1792, and in 1820 the Mechanics School was founded. In 1889 it instituted free scholarships in the New York Trade School, which are still continued. The membership of the society is about five hundred.

In a report just filed the trade school committee states that since 1891 there have been placed 652 young men in the school for instruction in the following trades: Bricklaying, pattern making, plumbing, plastering, house and fresco painting, printing, blacksmithing, electrical work, tile laying, steam fitting, metal cornices and sign painting.

"We are complaining to-day," says the committee in its report, "of the preponderance of foreign workmen, but it must be remembered that they came from nations where wisdom of training both the hand and brain long has been recognized as a part of their educational system, and there will continue to exist a deplorable lack of skilled mechanics among our American youth until we are prepared to make the system of manual training as free and as good as are our public schools. This society should not be content until it is prepared to offer in its own schoolrooms to the youth of the city a free opportunity to acquire proficiency in the use of mechanics' tools."

The report shows that the school is working almost up to its capacity. There are on the rolls 2,318 pupils, divided into two classes of two nights each, comprising about 1,904 individuals, some students taking double time, or four nights a week. There were more than 4,000 applications for the current term. The graduating class will number about 225 students this year. The cost of instruction per capita is $7.50. A quarterly magazine is published by the student body with great success.

In the arts instruction is given in modeling, the elementary course consisting of the study of natural foliage, fruits and flowers. Figure work from plaster casts is taken up in the second year, and in the third year this work is continued along advanced lines. The mechanical drafting course is an extensive one and covers a wide field. The class in physics, although well supplied with apparatus, is in need of much more to make it thoroughly efficient.

The society rooms are finely equipped and the library is especially attractive for all classes of members. In 1899 Andrew Carnegie donated $25,000 to alter and equip the present building. There are 78,184 books in the library, with a circulation of 233,-682. Fewer than one-third of the books are fiction.

PRUSSIAN TRADE SCHOOLS

To the Editor of the New York Times

In view of the widening interest which the Chamber of Commerce Committee on commercial education is awakening in that subject, I would direct attention to a summary acount of Prussian Trade Schools as furnished by the American Association of Commerce and Trade, Berlin, Germany. The report runs as follows:

"The Prussian system of trade schools has grown to be a very successful institution, and during the past years has made rapid progress, according to an article in the *Hallesche Zeitung.* In 1884, 664 continuation schools, including 58,400 pupils, were under the jurisdiction of the Administration of Commerce and Trade, and the number has since increased to 1,719 trade schools and 381 commercial schools, with a total attendance of 360,000 pupils. Besides this the number of special schools has increased from 56 with 8,000 pupils to 204 with, in all, 44,300 pupils. Although in 1885 about 570,000 marks were spent by the Government in supporting these schools, in 1910 the money granted for the same purpose amounted to more than 13,000,000 marks, apart from further 4,500,000 marks for supplies.

"Of course, in view of this tremendous development of the system, it was necessary to reorganize the management. The further development of the continuation schools was effected by means of cleverly arranged plans in the courses of instruction, and more especially through such schools becoming more and more a form of compulsory education, consequently obtaining

more favorable hours for the courses. Superintendents and head teachers were appointed; the schools were separated from the regular public day schools, and the pupils divided into classes representing the different vocations. The German Trade Department described the importance of these schools in the following words: 'They alone are equal to the task of holding the masses of young people before the time of their military service, and thus making them accessible to educational influence. Their purpose is not alone to act through the instruction imparted, but to form a foundation for other institutions providing for the welfare of the younger population.'

"The special trade schools have also made decided progress both in regard to number and organization. Besides the special schools for applied art, crafts, building, metal and textile industries, the trade schools for girls are worthy of special mention.

"Germany may be proud of its wonderful system of schooling, and most especially the continuation schools above referred to, where boys and girls are given a splendid opportunity to increase their capacities in earning their living, thus adding to the general welfare and prosperity of the nation."

These schools are noteworthy, apart from their special aims, because of the success with which they deal with the problem of furnishing some general directive guidance of youth in those critical years between fourteen and twenty—the years in which too many of our young people take the wrong track mainly for the want of some institutional connection.

New York, April 13, 1914. EDWARD F. CROWELL.

WEALTH OF FOUR LEADING NATIONS

The total wealth of the four leading nations is: United States, $130,000,000,000; England, $80,000,000,000; France, $65,000,000,000; Germany, $60,500,000,000. The wealth per capita is approximately: United States, $1,415; France, $1,425; England, $1,250 to $1,385; Germany, $1,100 to $1,200.

The amount of money in the United States, United Kingdom, and Germany, respectively, is: United States, $3,500,000,000; United Kingdom, $1,000,000,000; Germany, $1,500,000,000.

This includes the total of gold, silver, and uncovered paper.

The railroad mileage for 1911, the date of the last publication at hand, was: United States 246,573; Great Britain, 23,417; France, 31,391; Germany, 38,747.

WORK FOR UNIFORMITY IN EDUCATION SYSTEMS

The National Society for the Promotion of Industrial Education has issued what it claims is the text of a model statute, the passage of which would make industrial education compulsory in all the States of the Union and make the details of the system uniform.

"The unquestionable tendency in American education is toward broadening the responsibility of the State for the educational conservation of the child up to 16," said the bulletin. In this forward movement the following principles and steps seem to be demanded in connection with vocational as well as general education, says the bulletin:

State responsibility for training and educational welfare of all children, at least until they become 16.

No child to go to work unless he is at least 14, and has reached a prescribed minimum educational standard, which should be not less than that necessary to meet the test for entering the sixth grade of the regular schools or its equivalent.

All children between 14 and 16 should be compelled either to attend school or to enter employment, and when not employed should be required to return to school.

Where State-wide action is not yet practicable, local communities should be authorized by law to decide, either by a referendum to voters or by the action of a local board of control, whether children between 14 and 16, employed during the day, should be required to attend part-time classes for a period of not less than four hours a week out of their working time.

As fast as conditions need it, to move in every State in the direction of State-wide compulsory part-time education for those between 14 and 16 years of age who are employed as wage workers.

COLLEGE COURSE FOR KANSAS PRISONERS

A college education by correspondence for every prisoner in the Kansas State Penitentiary would be possible if a plan announced by Frank Strong, chancellor of the University of Kansas, should be adopted by the board of administration.

Chancellor Strong would have the privileges of the extension division of the university, including vocational training by correspondence, offered to the inmates of the penitentiary at the expense of the State.

WHAT THE WORLD READS

From the Bellman

Who, in the first place, appear to read the most? The Germans, of course. Last year Germany published more books than England, France and the United States together—a horrible total of 34,801, running into nobody knows how many million copies.

This enormous output is not altogether explained on the ground of an abnormal avidity for reading among the Germans. A French critic, doubtless in bitterness of spirit, once said that whenever a man wished to render his thought unintelligible, he put them into a German book. There are worthy Americans, with names as easily pronounced as Jones or Smith, who have written in German, apparently for this reason.

None the less the Germans must read at an appalling rate. The American record of 1,835 books of fiction, drama and poetry last year looks paltry when compared with Germany's 5,211. In Italy, on the other hand, where frivolity is supposed to flourish, the number of novels published was only one-eighth of the number in England, while the Italian medical books outnumbered those of England and the United States together.

England, to judge by these figures, has gone fiction mad. Its total output of books in 1913 was almost exactly equal to that of the United States, but its record for fiction was over 100 per cent. greater—2,504 books, against 1,156. If in the United States we deplore the deluge of fiction which drowns us with twenty new novels a week, think what life in contemporary England must be like.

France makes a specialty of law and political science, its last annual crop of such works amounting to nearly a fourth of its total output. Its fiction flourishes, though not as riotously as in England; but, rather curiously, it falls far behind both England and the United States in philosophical and religious books. The United States has shown neither marked weakness nor abnormal activity in the output in any department, though it shares with England an apparent dislike for history and for theory of medicine.

If we were to arrange the nations in a procession on the basis of these figures, we should find Germany lumbering well in the van, enormously swollen and inflated, with a doctor's thesis on the domestic life of the dinosaur in one hand and a book of sentimental lyrics in the other, and a placard, "Made in Germany,"

in semi-legible type across his chest. Then follows England, reeling drunkenly from an overaddition to novels, and tripping himself up occasionally to the vast delight of George Bernard Shaw, who at each stumble remarks, "I told you so." Next comes the United States, in dilettante fashion, reading anything that is not too serious. Italy is close on America's heels, grave, earnest, intense, seeking above all to make clear the truth—the new Italy this, and not the Italy of Renaissance tradition. France follows, keen, subtle, acute, bent on studying the problems which surround man's relations to his fellows. After these five giants come the small fry of the publishing world. It is a motley picture of contemporary civilization, but perhaps not a wholly unjust one.

DEATH OF ONE OF OUR MEMBERS

Western Electric News

Edward Puchta was born October 15, 1870. After graduating from the public schools and the manual training school at Washington, Mo., he entered the mechanical engineering course at Washington University, St. Louis, Mo. He earned his tuition during the last two years of his course by teaching classes in the university. At the age of twenty-one he graduated with high honors.

His connection with the Western Electric Company began in September, 1894, when he entered the drafting department.

There are a few men whose humanity is so large that it embraces everybody—men "with malice toward none; with charity to all." Their broadminded faith in their kind brings to them in return a love and loyalty that never falls to the lot of most of us. Such a man was Edward Puchta. A mere business acquaintance with him was a source of pleasure; a close personal friendship was a privilege to be sought for. It is a pleasant thing to hear the hearty ring of appreciation in every voice that speaks of him.

May we all live lives as truly successful. May we all die as sincerely mourned.

"Despite what men say in their blindness,
Despite all the follies of youth
There's nothing so kingly as kindness
And nothing so noble as truth."

TO STUDY IN MUNICH

From Vocational Education

By special arrangement between the city authorities of Munich, Germany, and the United States Bureau of Education, a party of twenty-five American teachers will go to Munich in April to study in the trade continuation schools of that city. The party will sail from New York on April 7th, and will spend three months in study and one month in sight-seeing, returning to New York on August 30th. This is the most remarkable opportunity ever offered to American teachers to study details of German methods of industrial education. Applications for appointment are coming into the Bureau of Education from all parts of the country. In making his selection the aim of the Commissioner of Education will doubtless be to take men who will bring back most to help in solving our own problems in this country. Among the many courses which will be open to these men will be art forging, goldsmithing, bookbinding, printing, lithography, glass painting, cabinet making, and several other trades not commonly taught in American trade schools. It is to be hoped that the school authorities in cities from which teachers are selected will realize the value of this opportunity and will pay the expenses of the teachers who go. These expenses will be chiefly for transportation, because the cost of living and the fees are very low in Munich.

COMPULSORY ATTENDANCE

Extract taken from a report on Industrial Education, published by H. E. Miles, Chairman of the Committee on Industrial Education of the National Association of Manufactures.

Compulsory attendance from the fourteenth to the sixteenth years (better the seventeenth or eighteenth) is necessary for children in employment and for that fifty per cent. of the child life of the nation which leaves school by the end of the sixth grade. Anything else is a continued playing and compromising with right and necessity. This education is not a boon nor a privilege. On the part of the child it is a birthright. On the part of the State it is absolutely necessary for the safety and advancement of society. To leave attendance optional is to substitute for necessity and right, personal preference, good nature and more or less cheap persuasion. It is to have some employers and some parents do right because they are willing to and others sacrifice the child life entrusted to them for any one of a thou-

sand cheap excuses. When any State, notably one like Massachusetts, seeing the right, so legislates, argument and cavil are dispensed with and the public in short order happily conforms.

PHILADELPHIA CONVENTION COMMITTEE

Educational Exhibits

MR. J. H. HANCOCK, *Chairman*.....The Curtis Pub. Co.
MR. A. J. ROWLAND.....Drexel Institute.
MR. J. H. YODER.....Pennsylvania R. R.
MISS HARRIET R. FOX.....Strawbridge & Clothier.
MR. E. J. SPEH.....The Bell Telephone Company

Hotel Accommodations

MR. HARRY WIGO, *Chairman*.....The Curtis Pub. Co.
MR. JOHN JACKSON.....Strawbridge & Clothier.

Reception and Entertainment

MR. R. C. BLANCHARD, *Chairman*.....The Curtis Pub. Co.
MR. WILLIAM C. ASH.....Phila. Trades School.
MR. JOSEPH H. HAINES.....Haines, Jones & Cadbury.
MISS HELEN SNOW.....The Curtis Pub. Co.
MISS ALICE M. BLAINE.....The Curtis Pub. Co.
MISS KATHARINE HUEY.....The Curtis Pub. Co.

Transportation

MR. L. A. MILLER, *Chairman*.....The Curtis Pub. Co.
MR. D. M. BECKER.....Pennsylvania R. R.

Publicity

MR. W. E. WALTER, *Chairman*.....The Curtis Pub. Co.
MR. WM. H. MEARNS.....School of Pedagogy.

Convention Daily

MR. R. C. CLOTHIER, *Chairman*.....The Curtis Pub. Co.
MR. WILLIAM H. MEARNS.....School of Pedagogy.
MISS ALICE M. BLAINE.....The Curtis Pub. Co.
MISS KATHARINE HUEY.....The Curtis Pub. Co.

General Arrangement Committee

E. C. WOLF, *Chairman*.....Curtis Pub. Co., Philadelphia, Pa.

SURGICAL CARE AT THE CARNEGIE STEEL WORKS *

By Dr. William O'Neil Sherman

The Chairman stated when he asked me to read a brief paper that you did not want a lot of high spun philosophy and advice calculated to cure all ills, but just a straightforward talk, based upon actual experience of what we are doing, under what conditions we are working and something of the results we have obtained. I shall, therefore, comply with the gentlemen's request and endeavor to be brief and to the point.

Having a true appreciation of the significance of proper first aid and the after-treatment in injuries arising from industrial pursuits, I wish to submit a few suggestions and recommendations for the recognition of a surgical organization by large industries. The first aid treatment has practically control over the final outcome of these cases. To give you an idea of the value of first aid properly administered, I will say that during the past three years we have been able to reduce the number of infected cases from 5.75 per cent to .01 per cent, or slightly over 1 in 1,000 cases. The infected cases take three and a half times as long to recover as the non-infected cases. The number of amputations and excisions and stiff joints resulting from infected cases is very great, while in the non-infected cases it is reduced to a minimum. The economic gain must be apparent to everyone when the loss of time, expense of treating the cases, together with the resulting permanent disability, are taken into consideration. The primary object of first aid is to furnish an aseptic or clean dressing that will prevent infection of the wound. Its further activities are to supervise the removal of the injured to the home or hospital and to render appropriate assistance in cases of shock, heat exhaustion, gas poisoning, freezing, etc. First aid, to be successfully applied, is dependent upon three factors, i. e.: First, properly equipped and organized Emergency Hospitals. Where the number of accidents are sufficiently large, a modern Emergency Hospital, with necessary equipment, in charge of qualified surgeons and female nurses, should be installed. Second, the intelligent co-operation of all employees. The success of the movement is in proportion to the interest and enthusiasm shown by the operating managers—all officials and workmen should familiarize

* This address was made to the first annual convention of The National Association of Corporation Schools held at Dayton, Ohio, September 16-19, 1913, and appears in the proceedings of that convention.

themselves with the rules and regulations on this subject. Third, education of the individual. The education of the employee is accomplished by the organization of first aid squads throughout the works. The revised American Red Cross Text-book on first aid is used as a standard work. Each class is given twelve lectures and demonstrations; competitive meets, at which prizes are given to winning crews, are held to stimulate and keep up interest in the work. In a short time the Carnegie Steel Company expect to have 6,000 trained first aid men in the organization.

If an injury occurs, it is immediately reported to the foreman in charge, who makes out a written requisition for the works doctor to render treatment. If the injury is a minor one, the patient is taken to a conveniently located stretcher box, where a first aid package (sealed and aseptic) is located. This package contains one ampule of aromatic spirits of ammonia —one triangular bandage—one gauze compress. The necessary dressings are applied by the captain of the first aid squad and the patient is directed to the Emergency Hospital. Should the injury be of such a character as to render the patient unable to walk, a Reeves stretcher is secured from a stretcher box, patient is wrapped in a blanket and taken to the Emergency Hospital by the first aid squad. The patient is given the necessary treatment by the attending doctor and nurses, after which he is either sent to his home or a general hospital, where the case is placed under the care of the chief surgeon. Automobile ambulances are used to carry patients from the place of injury to the hospital and to the homes of the injured. Special arrangements are made whereby private accommodations in the hospitals are provided for all cases. The care of the patient is placed in the hands of the operating room, ward nurses and surgeons—all of whom are in the employ of the company, thereby assuring the best of attention and ultimate results.

The use of the pulmotor (a machine for artificial respiration) has been the means of saving eight lives during the past year.

A perusal of reports reveals the fact that 8,000 foreign bodies have been removed from the eyes by doctors and nurses of the company, without one complication resulting to an employee. The old-time practice of unskilled fellow employees removing cinders and particles of steel from the eye should be strongly condemned, as it is frequently followed by serious complications—

even to the loss of sight. While the surroundings and the character of employment will always, to a certain extent, determine the number of accidents, the result of these injuries can be greatly reduced in seriousness by prompt and skillful treatment, the failure to properly administer first aid, and the subsequent lack of efficient surgical attention has in the past added to the death list many whose lives might have been saved, and has steadily recruited the army of maimed and crippled.

Many instances could be cited to show the economic advantage of "modern surgery," at the same time bearing in mind the fact that success in the treatment of the case is dependent upon the first aid treatment rendered. One great advantage has been the use of steel plates and screws in treating fractured bones, thereby reducing the disability of the injured, and the saving of arms and legs which would formerly have been amputated. During the last three years 146 of these operations have been successfully performed.

I see clearly the importance of this question and feel certain if the various industrials adopt the suggestion offered, that inside of twelve months you will be convinced of the great humane advantage of a surgical organization. The example of large industrials will do much to bring about the improved general conditions and will help to alleviate the present-day tendency toward the enactment of haste and ill-advised legislation involving industrial corporations—would allay the sense of resentment against and create a more conciliatory spirit toward corporations.

Along the lines of welfare work, I wish to call your attention to the old-age pensions, relief benefits, general sanitary improvement in the plants, playgrounds, swimming pools, drinking water fountains, toilets, shower baths, locker rooms, rest rooms, welfare nursing, etc. Time, however, will not permit a discussion of these innovations. The playgrounds are a recent institution, and I think it can be truthfully said are a blessing in the communities in which they are located. The average daily attendance at the New Castle Playgrounds has been 649; 30 per cent of these are children of employees of the steel corporation, 18 per cent are Carnegie Company children, the balance being children of the town people. Drinking Water Supply: Sanitary bubbling fountains, conveying filtered and refrigerated water, are located at convenient and accessible points throughout the works. All water is examined bacteriologically every two

weeks. A pure drinking water is just as assential as a pure food supply. Welfare or Social Service Nursing: The result of this experiment has been productive of so much good that in a short time we hope to have one or more of these workers on all the large plants. There is no one who can do so much good and who is in closer touch with the real needs and wants of the people than the trained welfare nurse.

SOME EFFICIENCY POINTERS

If you are going to put democracy into our industries, then you must educate our workingmen so that they can handle the privileges which are to come to them through this idea of democracy.

A proper system of industrial education will materially increase the individual efficiency, and scientific management will increase operating efficiency.

We have reached the point where we must determine the best system for applying the personal equation to scientific management.

Fair and equable wages; employer's liability in case of death or accident; service annuities, not old age pensions; profit-sharing and a system to insure proper industrial education are questions now being considered by the employers of the United States.

We are appalled by the statement that, on the basis of 300 working days in the year and eight working hours in a day, a man is being killed every four minutes in American industry and a man is being injured every four seconds. In other words, 75,000 human lives are being sacrificed each year to industry and nearly 2,000,000 injuries occur. Those who have given consideration to this condition believe that at least 75 per cent. of industrial accidents and deaths are preventable.

The minimum wage scale is being adopted by American business men not on the ground of philanthropy, but on the ground of good business.

Corporations are held back by industrial warfare and governmental opposition to industrial methods. Eliminating this industrial warfare is the work of the system which really makes a man set his own salary and, if necessary, discharge himself.

FEDERAL AID FOR VOCATION IS URGED UPON COMMISSION

Important hearings on vocational education have been held in Washington by the national commission on vocational education, with the purpose of finding out the needs for vocational education and whether or not national grants to stimulate the States are necessary to promote any of the desirable forms of vocational education. The bulk of opinion favored such aid to be given. The commission learned in these first hearings how far there is duplication of work on the part of the federal department and expects to determine how the work may be co-ordinated.

P. P. Claxton, Commissioner of Education, speaking for the Interior Department, with which the Bureau of Education is connected, described the extensive work which has been done by the Bureau of Education through publications aiming to give information and advice in the practical application of vocational education in the schools.

BUREAU EFFORTS SEEN

The bureau has issued scores of publications dealing with home economics, agricultural and industrial education, describing methods employed in successful schools and giving facts concerning the need of education in many vocations. He explained to the commission that the bureau is now engaged in gathering information to determine what kind of education people in various vocations need for their particular use; thus, for example, an attempt has been made to determine what the farmer, because he is a farmer, should know about chemistry, mathematics, biology, English, bookkeeping, and a score of other subjects. This will form the basis for determining what the school should teach.

A. H. Baldwin, Chief of the Bureau of Foreign and Domestic Commerce, gave the commission information concerning commercial education, especially for the development of outside commerce. Secretary William C. Redfield, of the Department of Commerce, has announced his interest in the development of practical commercial education for the promotion of commerce, and plans are being provided in his department for the utilization of information available for that purpose.

FARM AIDS DESCRIBED

The Agriculture Department, which has probably done more than any other department of the Government in providing raw

material for education in vocational work, was represented before the commission by Dr. A. C. True, chief of experiment stations.

The department has for many years been making studies of farm and home problems and publishing the results for the use of farmers and home makers. They have also been following the development of agricultural education in secondary schools, colleges, experiment station work, farmers' institutes and farm administration work.

The Department of Labor's aim, told at the hearings by Dr. Royal Meeker, chief of the Bureau of Labor Statistics, and Dr. Verrill, is to develop that phase of their work in order that vocational school directors throughout the country may have available expert information concerning the kinds of education which ought to be given for the different trades and industries. The bureau has a great amount of information collected in connection with investigations for other purposes, which can be made available for the practical service of vocational schools.

FOR SOLDIERS AND SAILORS

Of particular interest to the commission were the facts from the navy and war departments, presented by Commander C. B. Brittain and Captain Douglas MacArthur of the engineer corps, concerning the way in which the army and navy are preparing their men for vocations in the army and navy which they carry with them into civil life when their terms of enlistment expire. Both departments have for many years developed this service in order to prepare men for their immediate needs in the vocations connected directly with the army and navy work. It was stated that fully 10 per cent. of the enlisted men of the army get training in vocational work.

The Navy Department has in the past probably trained a larger percentage of men in distinct vocations. During the last year Secretary of the Navy Daniels has been developing a plan for the education of all enlisted men in general lines and in vocational subjects. When carried out to the full extent contemplated every man who enlists in the navy will come out of the service at the end of enlistment better trained in general subjects and prepared for work in some specific vocation. Both the army and the navy present opportunities for hundreds of different vocations such as carpentry, plumbing, blacksmithing, cooking, electrical work, signaling, machine shop, boiler making, etc.

ORGANIZED OPINION

A number of organizations have appeared through their representatives before the commission or have filed briefs with the commission, the National Education Association, the Association of Separate State Universities and Departments of Education in State Universities, the National Manufacturers Association, the National Metal Trades Association, the American Federation of Labor, the National Women's Trade Union League, the General Federation of Women's Clubs, the Association of Agricultural Colleges and Experiment Stations, the National Society for the Promotion of Industrial Education, the Farmers National Union and the Farmers National Grange.

The organizations have brought to the commission the concentrated opinion of millions of their numbers, almost without exception, strong approval has been given for national grants for vocational education. The commission is working at the material thus presented to them and will make a report by June 1st, embodying their recommendations and a tentative bill for federal action for federal support of such forces of vocational education as the needs of the country demand.

President Wilson has appointed the members of the Commission on Vocational Education, created by the new Smith-Lever law. The commission is directed by the law to make an investigation of educational methods and to recommend to Congress a comprehensive system of vocational education consistent with the provisions of the law.

The members are: Senator Hoke Smith of Georgia, chairman; Senator Carroll S. Page of Vermont, Representative D. H. Hughes of Georgia, Representative S. B. Fess of Ohio, A. Prosser, secretary of the National Society for the Promotion of Industrial Education, New York City; John A. Lapp, legislative reference librarian, Indianapolis; C. H. Winslow of the Department of Labor; Miss Florence M. Marshall, principal of the Manhattan Trade School for Girls, No. 1, Lexington Avenue, New York City, and Miss Agnes Nestor, Bush Temple of Music, Chicago, ex-president of the International Glove Workers' Union.

The law provides for co-operative agricultural extension work between the agricultural colleges of the States and the Department of Agriculture. It stipulates that the extension work shall consist of "instruction and practical demonstration in agriculture and home economics to persons not attending the agricultural college."

An appropriation of $10,000 for each State is made outright, and in addition $600,000 is granted to be used in installing the new system. For seven years an annual increase of $600,000 is provided, and at the end of the eighth year the system is to be supported by an annual appropriation of $4,800,000.

The aggregate appropriations are to be divided among the States on the basis of percentage of rural population. Each State, in order to enjoy the benefits of the act, must appropriate a sum equal to that apportioned to it out of the appropriation.

SAVING LIFE AND LIMB

There are now twenty-two Museums of Safety connected with the world movement to reduce industrial accidents and prevent occupational diseases. One of these Museums is located in New York City, being the only one in the United States, and one has recently been established at Montreal. From 75 to 90 per cent. of the accidents occurring throughout American industry are preventable. It is estimated that the changed conditions owing to the movement for greater safety during the past three years has prevented the death of 7,000 workingmen and prevented injury to 28,000 workingmen.

During the twelve great battles of the Civil War, 119,859 Union men were injured and 67,058 Union men were killed during the entire Civil War. It is estimated that approximately 75,000 men, women and children are killed in American industry each year and that approximately 2,000,000 are injured. This is at the rate of about one death every four minutes, and an injury every four seconds, on the basis of 300 working days per year, eight hours per day.

Three hundred years ago, average duration of human life in Europe was twenty years; to-day it is forty years. In New York City, twelve years have been added to the average human life since 1866. In Germany, human life is lengthened at the rate of three months each year.

INDUSTRIAL WARFARE

There was more violence caused by industrial strife in the United States during the year 1913 than during any year since 1848.

NEEDS OF STANDARDIZED OFFICE OPERATIONS *

By W. R. HEATH

Vice-President Larkin Company, Buffalo, New York

Every corporation with a right to exist is a "Public Service Corporation." Every employer calls his employee to a public service. Every man, be he ever so selfish, if he lives and works among men, makes his contribution voluntarily or otherwise to the common weal.

To be in business, therefore, means to be prepared to deliver valuable service to others, and it is not putting it too strongly to say that real business success is largely dependent upon the ability to deliver an intelligent public service. Let us eliminate all that class of pseudo-business that aims to secure more than an adequate return for what it delivers. We have left business that possesses a conscience and that aims to deliver a real service to the world. This is its real object, and incident thereto and as a legitimate consequence there is a return of profit and satisfaction ample and increasing as the service is appreciated and its scope broadens.

In such an enterprise where many are employed, it becomes a matter of grave concern how the business can grow and broaden without weakening its structure. No building can be constructed and maintained, no matter how skilled the builder nor how capable the caretaker, if green lumber is used; and you cannot build green timber into a seasoned structure with much better success.

The users of lumber to-day are dependent upon the dry kiln or at best practically yard seasoned with a dry-kiln finish.

In considering the office structure in our modern business, the yard seasoning of our building material is the grammar and high school, and other similar schools. The most enthusiastic advocate of the public school will readily admit that up to the present time the finished product of these institutions is rough and but partially seasoned timber. There is no finished product. There is reason to hope that these institutions will improve their product in the future, or employers will learn their common needs and aid schools to adapt instruction and practice to sup-

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ply them, but we are dealing with present conditions. Let us hope our advocates of vocational training will throw some light upon this subject and suggest a way to better results, but it is my judgment that at the present time our office school cannot lay claim to being more than a drykiln or a forcing process. The office school at present is not an institution. It is an expediency.

There have long been locomotive engineers, mechanical engineers, electrical engineers. Engineering courses have long been maintained in our institutions of learning. Graduates of these institutions take rank at once, and while they have much of the practical to learn, they have signal advantages over the old school practical man.

The automobile is no longer an individual creation, it is a standardized machine. Its primary purpose is to translate fuel into mileage. Given the wagon, and its proper connection with and easy separation from the power, attention centers in the carbureter. The power is gas or gasoline mostly—electricity in a more limited field—kerosene, distilled oil, alcohol and compressed air are here, or almost here, and coming, and every new thought on this subject is likely to scrap half the present product, and yet such standards have been established that the present up-to-date machine differs from last year's only in labor saving or fuel economizing attachments or added luxuries. The inventor and the engineer have been busy searching for the best and harmonizing the parts until the automobile of to-day stands for the composite of all inventors, manufacturers and designers—a standard machine, yet with sufficient differentiation withal to preserve the individuality of the several makers.

The machinist who knows one machine can readily adapt his talent and knowledge to any other.

The automobile development in the field of mechanics is not unlike what the office machine development should be.

Office operations should be standardized. Things equal to the same thing are not only equal to each other, but in office work should be one or the other. It must be that I speak as a prophet or as an impractical dreamer, for in the whole of the Buffalo Public Library there cannot be found one book or article on the subject of, or akin to "Standardizing Office Operations." I take courage, however, from the Editor of "System," who says:

"Every great industry has organizations that are dreaming out the future. Don't misunderstand the word *dreaming*. Call

it *analyzing,* if you choose. It is the art of foretelling the future, and being prepared for it. The dreams of yesterday are the realities of to-day. Men once denied the possibility of the telegraph and the telephone. Not many years ago the wireless aerogram was ridiculed. The dreamers made these things possible—the scientific business dreamers."

And are there no dreamers to make practical men think that the modern office can be reduced to a definite number of standard operations? Is not this the practical question to consider before we can tell the schools how they can help us and before we can make any real progress with the Corporation Office School?

Will the corporation continue to put its best thought on the improvement of the goods and the reduction of its costs without being impressed with the importance of the means by which these energies are translated into terms of profit?

An interesting illustration of the practical value of correct costs is told by Borroughs, "A Better Day's Work."

"A young Chicago concern manufactured a line of specialties. A large portion of the produce was 'regular,' i. e., could be put through the factory as a stock requirement. A certain proportion, however, was built on special order."

> This firm started in business with a capital of $50,000. The first year of their business existence was very satisfactory, and the net profits figured in the neighborhood of $35,000. Two of the three partners were more than satisfied with this result, and were willing to "Let well enough alone." The third partner, however, was not satisfied and wished to know more about how and where they made this money. He prevailed on his partners to install a cost system. The following year they found that while their profits were about the same as the previous year, on their regular goods their cost system showed them they had made a profit of over $50,000, whereas on their specially manufactured product there had been a dead loss of nearly $15,000. Thus, while the business apparently was earning a good profit, in reality there was a large leak which they had not known anything about.
>
> It so happened that in this particular line there were only three concerns. This young concern, with the information gained through their cost system, the following season made an extra effort to get the regular business, and by

judicious bidding threw most of the special work into their competitors' hands. Within a year one was obliged to get out of business, and the other competitor, realizing that in some way the younger concern had the best of the argument, made approaches and a combination was formed, so that to-day these three young men practically control the entire market in their particular line.

It may be argued that this merely illustrated the need of a cost system, but you will admit a cost system should tell the cost, and cost systems that do tell cost don't "just happen," they are worked out with skill and approached by "State Roads"—standard, well-defined avenues.

A starch manufacturer, who sells one of his customers on a cost-plus-a-profit basis, recently wrote with reference to the accuracy of his invoices, which had been questioned:

> "I do not wonder that you did not understand our statement of corn purchases in so far as the cost of the corn related to the average cost used in figuring the cost of the starch, as this is the rock on which I split with the expert accountant who devised our new cost system. For nearly a year his cost figures almost drove me mad, as they did not check out with the corn actually used in the starch packed. When I went down to Pinehurst last winter I took the problem with me and dug on it for a solid month, until finally one day I discovered that instead of taking the average cost of the corn actually used in the starch packed for the month, the expert was taking the average cost of the corn charged during the month in connection with the average cost of the corn inventoried the first of that month. This, of course, did not relate to the starch packed during the month, nearly half of which would be made from corn bought during the previous month. This discovery was illuminating, and I went on and discovered that for his feed deduction he was taking his figures from the feed packed during the month, which would not relate either to the starch packed during the month or to the corn purchased during the month. I think I can say without any qualification that it was the worst mess that I ever found in my business experience. How any sane man, to say nothing about an expert accountant, could use a figure for raw materials for his cost which did not relate to the raw material actually used in the product manufactured, is beyond me."

So we must admit in cost figures, as in other things, "It is better not to know so much than to know so much that ain't so."

And right here may I not say a word for the *layman*, the owner of the business, the man who stands behind the gun, the faithful servant who bears the burden of everybody's shortcomings? Has he not often been *expertized* to his own hurt? Has he not often been regarded by his corps of experts as the favored recipient of the unearned increment, and then has he not gone on a month's vacation to figure out right what his experts in a much shorter time had figured out wrong? And does he not often feel the business more accurately than his expert figures it? And may he not in a moment of leisure dream of the day when standards shall guide the expert to true results and he may take a real day off—and fish?

While we may agree that the Efficiency Engineers who advertise "The Organization with Experience in a Thousand Factories" sound much like the confession of the great oculist who admitted that he acquired his skill by "spoiling a bushel of eyes," we must concede that the expert possesses a by-product of marketable value.

We need this experience, but we do not wish our business to be used to exploit another's. We ask all these experts to come together in solemn convention and pool their experiences and pronounce certain fundamentals to which they will all subscribe, adopt certain standard operations by which these fundamentals may be applied to any business, and agree upon certain standard forms, precedents, and diagrammatic charts by which the conditions of any business may be shown and readily grasped by the man whose final O. K. puts the ship under weight.

Pity the business that says, "I am a part of all the experts I have met." Let us no longer say, "I am of Paul and I of Apollos and I of Cephas."

It is not A's system or B's system that we want, but fundamental principles, standard operations and standard expressions of conditions, so that a National Bureau could put its official seal of solvency on any business by the means of like standard operations of check and audit.

I know a corporation that is insolvent. It has been insolvent for ten years. It has never made a dollar since its organization. The captain of this industry has sailed the commercial seas without compass or rudder, just main sail. They have sold and are selling stock at par and above par, and stockholders are taking

passage on this craft with no more knowledge of its rooten condition and its unseaworthiness than you personally have of the seaworthiness of the splendid floating palace that took you on your vacation last summer. But you were protected by the clearance papers, while the blind buying public has no protection in its anxious search for an investment with a future which shall be a security against need in old age. This stock is not sold with reference to what the business has done or is doing, but only by poetic allusions to the first shares of Standard Oil and Bell Telephone. And there is no power to give it pause.

The late Charles Waldo Haskins, in an address on Reform in Municipal Accounting, was reported as saying:

> "Not men, but methods, or, rather the unmethodical accretions of accounts, are primarily responsible for the conditions that are calling for a reformation in municipal accounting throughout the United States.
>
> "Now, a club of merchants, backed up by municipal officials, asks, as Peel asked England some years ago, whether exchequer evils are not better understood, and more easily remedied, if the accounting is first established upon a basis of business principles. . . .
>
> "Reform in municipal accounting is no commonplace affair.
>
> "The confusion of accounts is appalling. And if appalling to those who have spent the best part of their lives in learning to read between the lines, and to guess the riddle of the books, what must it be to the layman? What, especially, to the man of honor placed in the white light of public accountability; responsible for the ebb and flow of the revenue and for every pulsation of the city's treasury? And, above all, to the taxpayer and the community at large? right here, in the inability to read the unreadable, to translate the untranslatable, is where the fair name of honest men of all shades of political thought has been smirched; where others, not so honest, have found their chance; and where our municipalities have sunk an important measure of their self-respect."

I have spoken thus of the ultimate, that I might show the need of a right start at the beginning of business and at the beginning of a youth's career.

Business is not so complicated when it is first launched, and the boy's life is simple at first. If the fundamentals of Business and Boys were right, there would be fewer failures of both.

In all business we must bear in mind we are dealing with men. They must be counted on as men and not as machines. Right here some of us forget our fundamentals, and plan to have men grind out dollars rather than to grow a business of men and revenues.

What can our schools teach our boys and girls that will be helpful to them and to us when they shall seek to exchange their services for a livelihood?

I answer, first, right thinking with reference to the individual's relationship to the social order. That one cannot peaceably live by his wits while the rest sweat. That the acquiring of money or property is not the chief end of man. That one cannot be truly great or successful whose intellect only is developed. That in youth is the time to lay the foundation for health and physical strength and to acquire a surplus. That back of and underneath all individual life and effort is a great universal purpose that is spiritual rather than intellectual, which if comprehended and obeyed, enlarges, sweetens and glorifies life.

Secondly, our school can teach the boys and girls to think business thoughts. If John can hoe two rows of beans in the time it takes Charles to hoe one row, how much more is John worth than Charles? This is more than a problem in mathematics, and the answer is not "twice as much." It is a problem in efficiency, and involves the consideration of fixed charges and overhead expense.

The schools can teach business nomenclature and can familiarize the boys and girls with forms in daily use, such as Bills of Lading, Freight Bills, Invoices, Accounts Rendered, Checks, Drafts, and the like.

Third, the schools can teach simple problems in business analysis, so that the learner may have a general grasp of the subject. Practically all business is comprehended under: (1) Purchasing, (2) Movement of Goods, (3) Storage, (4) Changing Form and Character of Merchandise, and (5) Selling.

This applies to farming, to the building of a railroad, to the manufacture of cash registers or to the conduct of a grocery.

Under the subject of Purchasing consider the interest that could be created in the average class of boys in discussing such

topics as The Buyers' Appropriation. What to Buy. Quality and Price. Costs and Profits. Where to Buy. Financial Ratings. When and How Much to Buy. Deliveries. Contracts and Some Principles in Commercial Law. Buying Records. Buying on Requisitions and Over-Stocks.

This branch of our subject cannot be pursued further at this time, although it is almost endless in its interesting ramifications.

Fourth, the schools can teach some of the standard office operations when we have any to offer. At present there is not a standard adopted even for an alphabetical file, and probably few persons here can tell whether the Mc's are at the end of the M's or not in the Directories they use daily. And to ask each of you to arrange the names John Smith, J. Smith, J. W. Smith, John W. Smith, J. Worthington Smith, and Mrs. Smith alphabetically would end in hopeless confusion.

Our office school confines its efforts almost entirely to teaching the making and keeping of sales records, and to writing letters and the keeping of correspondence relating to sales.

It includes in general the mastering of official abbreviations, the use of the office manual, knowledge of the physical arrangement and all routine work.

Our school experience now extends over several years. We lay no claim to great attainments. We have made but a fair beginning, and while we could hardly accomplish our work without the help of the office school, we are crude and unpedagogical, the demand for graduates being too great for our professional reputation.

In conclusion, let us take a look up the road. Machinery revolutionized and is revolutionizing agriculture; machinery revolutionized manufacturing; machinery revolutionized transportation and travel, and machinery has revolutionized and will still further revolutionize office work.

The telegraph, the telephone, the ticker, the time-card clock, the typewriter, the calculating machine are performing but a part of the service that will be required of them in the no distant future.

The New York *Tribune* says:

> "In the vertiginous haste of modern business life the advent of any labor and time saving device is avidly absorbed in the organism of its ceaseless activities. It is hailed with delight and its first cost matters not."

President Emeritus Eliot says:

"A man ought not to be employed at a task which a machine can perform."

Another says that:

"Automatic machinery is used wherever it can replace fallible brains in processing."

Still another:

"What the world wants is more machines, and better ones, To Do the Mechanical Drudgery That Men Are Now Forced To Do."

Toward what does all this trend? At what point does it focus? It is said with the hen everything goes to egg. She is always laying an egg and getting ready to lay another. With the preacher everything goes to sermon. He is always preaching one and getting ready to preach another. So in office work everything goes to accounting, we are always accounting something.

The co-operation of men and means now employed in separate mechanical devices will produce a machine which will not only record the discriminative part of an accounting operation, the only one that requires or permits any discretion, that is to say, the original entry, but will simultaneously by the same mental effort automatically carry the amount to the proper debit and credit, and dare I prophesy it, make the other routine changes in the accounting diagram, so that Profit or Surplus shall immediately feel the impulse, and instantly respond by expansion or contraction by exactly as much as the transaction has affected the business. Then shall be eliminated the mental, non-volitional drudgery of a million men who handle figures, and the "Trial" Balance will be no more. Surely, now I am a prophet, Aye!

"I'm the prophet of the utterly absurd,
The patently impossible and vain,
And when the thing that couldn't has occurred
Give me time to change my legs and go again."

ASSOCIATION OF COLLEGE PROFESSORS

Professors John Dewey and C. J. Keyser, of Columbia University, have been selected to serve on a committee for forming an association of college professors.

OFFICERS OF INTERNATIONAL TRADE UNIONS ASKED TO GIVE OPINIONS

International officers of trade unions whose headquarters are in Indianapolis have received letters containing a long list of questions from Senator Hoke Smith, of Georgia, chairman of the commission created to investigate and report on vocational education recently appointed by President Wilson, as provided by the Smith-Lever law. The questions relate to labor conditions and ask the international officers to state their opinion concerning vocational education.

The new commission is directed by law to make an investigation of educational methods and to recommend to Congress a comprehensive system of vocational education consistent with the provisions of the law. The bill provides that it shall consider and report a plan by December 1st, or as soon as practicable thereafter, for national aid to vocational education. Congress appropriated $15,000 for the work of the commission.

$15,000 JOB GOES BEGGING

From the American Machinist

We know an executive who wants two or three men as assistants; if he could find them in his plant he would gladly pay them $40 a week. He has tried a considerable number in these positions during the past year, but without success as yet. He feels that he is positively hampered by the lack of them.

We know that there is an active demand for $2,000 men, and we can readily believe that there is a keen demand for $10,000 men. In fact, we know a big firm in one of the oldest and most important industries in this country which has been hunting for over a year for a man to whom to pay $15,000 *and they cannot find him.*

It is remarkable that in a plant employing, say, a thousand men, there are so few who raise themselves above their fellows far enough to be conspicuous to the management. And even, of these few, not all have the initiative, the ginger, and faculty of being thorough, that would make them of value as assistants to the executives. What a godsend to the engineer is the draftsman who can do his own thinking and dig out the solution of a problem somehow, without constant prodding and pointing from the boss!

CONTINUATION SCHOOLS FOR APPRENTICES, CINCINNATI, O.*

By J. Howard Renshaw, Principal

COMPARISON OF FIELDS

The Cincinnati Continuation School has been the outgrowth of corporation schools such as are represented at this convention. Now, Cincinnati is not so large a place that many of our factories employ thousands of men in each factory nor will the nature of our product permit of production on so large a scale. The educational problem is not so much a corporation problem as it is one of the small factory finding means of developing a most limited number of trained and efficient employees. The element of cost per pupil does not decrease as the number of pupils decreases, but increases at a prohibitive ratio.

HOW CINCINNATI REDUCES THE COST OF MAINTENANCE

The Houston Stanwood and Gamble Co., and The Cincinnati Milling Machine Co., engaged my services some seven years ago as an instructor to their apprentices. I gave but a portion of my time. The other firms watched the experiment for two or three years and decided that they, too, would like to have a share of my services, or an equivalent service. The carrying out of the plan of the instructor visiting each shop involved a school-room in each shop and a duplication of equipment in each plant. The individual plant scheme necessitated all, or at least half of the apprentices, being withdrawn from the shop at the same period, thereby handicapping some of the departments.

THE PUBLIC SCHOOL PLAN

The public school came to the front with a plan whereby they assume all the expense incidental to the building, equipment, teaching and supplies, and the firms patronizing have only to assume the responsibility of the loss of the apprentice's time and the payment of his wage for that lost time. The plan of the schools incorporates:

(1) A centrally located building.
(2) Nine one-half day sessions (different groups):
7.30 A. M. to 11.00 A. M. (one group).
1.30 P. M. to 5.00 P. M. (a different group).

* This paper was read at the first annual convention of The National Association of Corporation Schools held at Dayton, Ohio, September 16-19, 1913, and appears in the proceedings of that convention.

(3) Three instructors (full time).

(4) An equipment for 24 pupils.

(5) But one apprentice at school each half day from a department unless there are more than nine in the department.

(6) The mingling of apprentices from different shops.

(7) Eleven months session per year.

(8) Faculties from all shops grouped by departments or trades.

(9) Shop inspection or visitation by the instructors on the two half days school is not in session, Monday and Saturday mornings.

While the public school plan overcomes certain financial difficulties and departmental problems, nevertheless, it limits the control of the school by the shop and involves the growth of the community in the development of the factory. The influences of labor, religion, etc., become involved in the scheme and tend to make progress slow. The Central Public School plan has been in operation four years in Cincinnati (September 1, 1913) and proven satisfactory to all concerned.

STEREOPTICON EXHIBIT

The types of apprentices.
The trades and classes.
The subjects and methods of instruction.
The equipment.
The faculties, etc.

ECONOMIC INSTRUCTION

When I began the teaching of apprentices, I found that they had two other instructors beside myself. First, there was the foreman of their department, and, second, there was the self-styled political economist, who held classes at noon on the lumber pile or elsewhere. The attitude of the apprentices soon brought me to the realization that I must also teach economics, so I devote one-half hour with each class each session to instruction in the principles which, for the want of a better name, I shall call economics. Now I am not expounding to the apprentices the cause of labor or capital or religion nor have I been held to task for a single statement in a period of four years with nine lectures a week and what I have said has been diffused weekly

throughout the shops and offices and subject to the possibilities of missunderstanding and miss-or mal-quotation. I know of no shop employee with such a record, nor do I deem it possible for an employee of a shop to so gain the confidence of the employees. The fact that the community knows that the public school is for its good, and consequently gives a loyalty which permits of doing an uplifting work, is the one invulnerable point in favor of the public school plan. That the economic instruction of the apprentice is by far the most important part of his schooling I deem too self-evident to waste your time arguing and will present some subjects taught under the head of economics.

COMPARATIVE COST OF LABOR

An apprentice is subject to influences which lead him to false conclusions and one of these influences is the lack of complete information or data. A single blackboard illustration will suffice.

Problem: If it takes an apprentice three hours to complete a piece of work at ten cents an hour, which a journeyman does in one hour at thirty cents per hour, then what? The apprentice concludes that the firm breaks even. Now the truth of the matter is that the overhead in each case is about thirty-five cents per hour per machine and the problem should be stated about as follows:

	Apprentice 3 hours.	Journeyman 1 hour
Wage	.30	.30
Overhead	1.05	.35
Profit	.15	.05
	1.50	.70

Since they do the same piece of work, the selling price of the work is the same in both cases and if the rate of seventy-five cents per hour is the shop rate for work, then the firm actually loses on the apprentice under the above conditions.

Now it is generally argued that the boy should measure his production by the ratio of his wages to that of the journeyman and in many cases the journeymen are responsible for the argument, and one does not have to stretch a point to show that the general wage of the journeyman is depreciated by the boy's lack of production. Thus the principle of "Overhead" is introduced

to the apprentice and becomes the topic of investigation and explanation.

RELATION OF EMPLOYER AND APPRENTICE

Apprenticeship, let us state it in the cold language of the boy, is a contract between two thieves—the firm getting the right to steal from the apprentice and the boy from the firm. Now the cardinal mistake the boy makes is that he focuses his attention on what the firm is getting from him when he should be all absorbed in seeing what he can get from the firm.

Father's joking advice to us when we talked of a thief entering the home was to never mind what the thief was taking but see what we could get from him, implying that we had less to lose than the thief would have. Really, what has the apprentice which the firm can steal. Nothing but his energy. If the boy will eat three good meals a day and look well to his sleeping, he can replenish each night what the firm has taken during the day and be stronger for the taking. Now let the boy begin to find what the firm has which he can steal. Not brass and screws and such things, for they have no real market value, but the firm has something which is worth the stealing and that is the business. Now, hard, faithful service will blind the best of bosses so that the taking will be an easy matter.

WHAT IS A BUSINESS MAN

There is no dearth of labor, but a dearth of *skilled* labor, nor is there a dearth of business men, but a woeful lack of skilled business men. Every boy is entitled to have a star to hitch his wagon to and the apprentice is no exception. He should be taught that to become a successful business man is the goal of his labors and his path leads to that high honor. Now there are five distinct functions to the man of business who is to rise without much capital and they are as follows:

(1) A trade, learning how to change raw material to a finished product. A real apprenticeship.

(2) The ability to handle men and material, rather an executive function and represented by foremanship.

(3) The knowledge of distribution or the ability to sell.

(4) Commercial conventionalities such as contracts, shipping, and the like.

(5) Culture.

I will not stop to expand but simply outline the aforesaid in order to give some idea of the breadth of this subject of economics for the apprentice.

THE DIGNITY AND NECESSITY OF LEADERSHIP

An inquiry into the attitudes of mind of an average apprentice will disclose the fact that he is rather antagonistic to his employer and employers in general. He looks with awe upon the doctor or lawyer and grants them the right to an automobile and a palace on a hill, a seat in council or on the school board. He begrudges his employer the same on the grounds that it comes out of his own energies. He will take the advice of the merchant, tailor, butcher or baker at its face value, but feels that his employer's advice has a tinge of selfishness in it.

Now a consideration of the community in general will bring out the three classes:

Those who produce wealth.

Those who turn it over.

Those who distribute it.

The wealth of a manufacturing community comes in by an employer purchasing a few dollars' worth of raw material out of town and working up that raw material into a finished product and reselling it to a distant market.

As an example let us assume that a manufacturer spends $20 for pig iron out of town and brings it home and pays wages to develop it into a finely wrought machine which he sells for $1,000 in a foreign market. While twenty dollars went out of town, one thousand came back, and the community was thereby enriched. Overlooking the equity of the distribution of that thousand dollars between capital and labor, let us consider the class of people who are a necessity to every community but do not work on the raw material but make their living by serving the community. Such as the doctor, lawyer, schoolteacher, preacher, policeman, etc., I mean, who merely turn wealth over. These people are surely not to be compared to the business man when the production of wealth is in consideration. The third class, or those who distribute wealth, such as the butcher, baker, merchant or tailor are generally engaged in cornering the wealth which the manufacturer has brought into the community and which the workers for him are carrying around in their jeans, and after deducting their profits are engaged in distributing this

wealth to the wheat fields, the plains, and the other sources of the common commodities. Now, does it not appear that the one type most essential to the permanency of the community is the man whose brains produce the wealth of the community, and if there is any position worthy of emulation besides that of being President of our country it is that of the business man whose brain and brawn has created the wealth which has wived and shrived the community? If there be one entitled to more of this world's pleasures than the business man, who is it? Such, gentlemen, is the nature of our economics.

CONCLUSION

I have sought to but suggest to your minds by this hasty and syncopated talk some of the functions of a school to which apprentices have been sent in the city of Cincinnati and wish to conclude with a single statement that the school is the pride of the manufacturer, the union, the apprentice and the public school system, this school of which I am honored with the privilege of teaching and representing.

AS ONE MIND UNDERSTANDS

Editor of The Globe—Sir: Fight refined becomes competition; more refined it becomes rivalry in wisdom and virtue.

We learn the existence of natural law by violating it.

Crimes are exhibitions of survived animal traits.

Never to err would necessitate having all knowledge.

Imperfection is a necessary element of life.

Through sinning we learn righteousness.

Perfection is a point on our ever-receding horizon.

The best people are either delicate or dead.

Leaders are of coarse, brutal fibre.

The better a man is the more he will suffer.

It is a long way to the time when truth shall govern and error be crushed to earth. O. N. Y.

New York, February 21.

A RAPID AGE

According to the publishers of the Standard Encyclopedia, 20 per cent. of all the progress of the world has been made during the past twenty-five years. The problem of the moment is to make adequate provision for the progress which will come during the next twenty-five years.

SOME PROBLEMS OF APPRENTICEHSIP SCHOOLS *

THOMAS E. DONNELLEY
President, R. R. Donnelley & Sons Company, Chicago

Schools for the training of craftsmen, run by private corporations, occupy a critical position in the popular movement for trade and education. No subject except that of scientific management and "back to nature" has been discussed in our prolific press to such an extent, nor with as little knowledge and appreciation of the facts, its limitations and its actual possibilities.

The accepted conclusion is that vocational education should become an integral part of our public-school system, and the popular opinion seems to be that in the near future we manufacturers and merchants are to have turned out for us from the schools a race of embryo mechanics, clerks and executives who will settle for all time the question of competent employees. I have no fight with this dream of the schoolmaster and the professional or dilettante social reformer. I hope in time their dream may be realized, but my practical experience with the problem of training boys for the printing trades convinces me that for the present at least such a program is extremely visionary, and that before this present general program of industrial education succeeds there are years of floundering and disappointment before us. We have all made the grave miscalculation that our democratic, politics-ridden, public-school system is the equivalent in effectiveness to the autocratic system of Germany. If instruction in the trades is to be successful in our public schools, everything in the management of these trade schools must be subservient to the effective teaching of the boy, yet at the very beginning we have an influence pushing forward which declares itself in opposition to any method of teaching which may affect its own privileges. I do not know of one instance in an actually existing of proposed vocational school, supported by general taxation, where organized labor has not forced a representation upon the board of managers for the avowed purpose of seeing that their own monopolistic advantages are not jeopardized. Upon us manufacturers, and other business enterprises, who are conducting train-

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* This address was made to the first annual convention of The National Association of Corporation Schools held at Dayton, Ohio, September 16-19, 1913, and appears in the proceedings of that convention.

ing schools, at our expense, rests the responsibility of establishing vocational education on a successful basis in this country.

The Lakeside school for apprentices was started five years ago to train competent compositors, pressmen, bookbinders and engravers for the Lakeside Press. The idea was suggested to the writer by reading in a report published several years ago by the Department of Labor on the apprenticeship system of Europe, a description of the school of the Chais Printing Establishment in Paris, which had been in operation for over eighty years. This account convinced the writer that such a school is practical.

The Lakeside School is what is known as a half-time school, for the first two years the boys spending half of their time in the school room and half in the shop. During the balance of their apprenticeship they spend four hours a week in the school. All school time is during regular working hours.

It is not my intention to describe the school in detail, but to briefly touch upon the three features which seems to me to have been most instrumental in its success.

We employ our boys—thirty each July—at the extremely early age of fourteen. This is done in face of the fact that the laws of Illinois permit boys between the age of fourteen and sixteen to work only eight hours per day, and prevents them from working upon any power-driven machinery. This policy of employing boys at such an early age was adopted after an attempt to employ boys at sixteen or over, and the failure to procure a sufficient number of boys at that age of the right caliber. Boys from the laboring classes, in Chicago at least, quit schol at fourteen and go to work. As most factories run more than eight hours, they have difficulty in finding steady employment. They drift from one incidental job to another, and spend a large portion of their time out of work and on the streets. By the time they have arrived at the age of sixteen and can take a factory position they have become street hoodlums, and if they had acquired any mental discipline in school, have lost it. To save the boy for himself and for ourselves we have been forced to take him as he comes fresh out of school, and our rule is that a boy must graduate from grammar school at fourteen and come directly to us. The fact that such a boy has finished his eight grades at fourteen shows that he must be reasonably bright, and that his parents have been sufficiently interested in his education to keep him constantly at school. No boy is taken without an inquiry into his school record, a visit by our supervisor to his home to

interview his parents and to ascertain his home surroundings, and an agreement that after a six months' probational period both he and his parents will sign an apprenticeship indenture for six and one-half years. During this first six months from ten to fifteen are dropped as not suitable to the business, but thereafter the number remain almost constant.

As the boys the first two years work in the factory only half time their wages are necessarily small, being two dollars and forty cents per week the first year and three dollars the second. At the beginning of the third year, when the boys work full time in the factory, they receive ten cents per hour, and one to one and one-half cent per hour increase every six months thereafter; but, in spite of the apparently low initial wages, there has been no difficulty in getting all the boys wanted. Each year the standard has improved, and we have applications from parents in advance of the day that their boys will become eligible.

I have given in some detail our method of selecting boys, because I feel that the character of the boy is the most important factor in the school's success. One of this country's greatest merchants once told me that during his active management of the business he never allowed anyone else to employ a boy, and he never employed one until he had had three interviews; because, he said, "From the boys I employed I had to develop the men to run my business," and I know of no more aggressive, efficient, and loyal mercantile organization than the one made up of the boys this merchant picked out twenty and thirty years ago.

Most manufacturers think they have no work that can be performed by a lad under sixteen years. If they really study the situation they will be surprised to find how handy such boys can become. If, in your community, the boys can be kept in school until they are older, it is your good fortune, but there should be no interval between the time he leaves the discipline of public school and enters the discipline of the factory school. If the parents will not keep him in school until a more advanced age the only alternative is to take him when it is necessary. Our experience is that the boy taken at the age of fourteen before he has acquired the wanderlust is more liable to remain contented during his entire apprenticeship course.

Next in importance to the necessity of selecting the proper boy is the selecting of the proper supervisor. The delegating of some one to give his entire time and thought to the management of the school is the only insurance of its success. For one of the execu-

tive force or superintending staff to undertake the detail of directing its activities is a mistake. In addition to the actual work of instruction the apprentice must be treated in the factory much more individually than a journeyman, and the adjustment of his relations with the foreman and shop routine needs the contant attention of one personally informed of the conditions.

The question arises, what sort of training should such a supervisor have—that of the skilled mechanic or that of the pedagogue. Without in any way reflecting upon the advantages of the craftsman as an instructor, we consider that we have been most fortunate in having obtained a teacher of wide academic experience to take charge of our school.

The actually teaching of the handicraft must, of course, be taught by a practical hand, but in all shops there are journeymen of unusual skill who can perform this part of the work. But the activities of an apprentice school does not end with teaching handicraft. We aim to develop boys into all-around intelligent mechanics and men, and there is as much call for the experience and ability of the trained education as in a school of purely cultural courses; in fact, I believe there is a wider field and better opportunity for character building—the first aim of all education —in the corporation apprentice school. In learning his trade we want the boy not only to master the science of his craft that he may be an intelligent worker, but we also want to develop accuracy, application, honesty of purpose, reliability; in fact, all those traits which go to make up character.

Nor should the work of the teacher end with the quitting bell. He should familiarize himself with each boy's home surroundings, his interests and activities, his reading, and last, but not least, his attention to his health. We all remember the quickening influence upon our boyish ambitions of some noble and sympathetic teacher. Are we wandering too far afield from the practical affairs of the workshop to hope that our supervisor may also be an inspiration to our boys, and that by keeping in intimate touch with them he may guide them over many rough places, and instill into them a higher idea of life than perhaps their environment would arouse. We look upon our school as a means of training our future factory organization. We want that organization to be the most intelligent, efficient, and permanent organization in the printing business, and we believe that such an organization must be built of workmen of character as well as skill. It makes no difference whether the head of the school be a mechanic or a pedagogue,

provided we realize that upon his shoulders rests to the greatest extent the success of the enterprise, and that we find a man who is an educator in the true sense of the word.

What subjects should be taught in a plant school, and what standard of scholarship should be demanded? There can be no doubt that both the handicraft of the trade, and its technology should be taught, but should the academic work be extended to purely cultural subjects? On the theory that we are attempting an all-round development, we have added many studies of no direct application to the printing business. Not only is arithmetic reviewed—and the necessity of such a review is a sad commentary upon the lack of thoroughness in our public schools—but bookkeeping, algebra, and geometry are also taught. A course of elementary, old-fashioned political economy is planned for the advanced apprentices, and each boy is compelled during his seven years to read and report upon, annually at least, six volumes of standard literature. It is hoped that at the time of his graduation an apprentice shall have acquired a general education equal to that afforded by a high-school course.

Of equal importance with the subjects taught is the standard of work required from the boy. I believe that the practice of our public schools in adopting as a passing mark 70 or 75 per cent is a grave mistake, and tends to create careless and sloppy habits of mind in the pupil. Our new boys have no idea of the necessity of accuracy or the value of time. They apparently consider "near right" as excellent, and would putter along at their own sweet gait. From the first week a time limit is set upon their tasks, and the task must be finished perfectly within the allotted time, to earn a mark of 100. For an average of 90 for the year a boy is rewarded with a two-weeks vacation with pay, and for a sustained mark of over 95 per cent for six months he secures a bonus of thirteen dollars. A very valuable by-product of the maintenance of this standard by the apprentices in the shop has been its quickening influence upon the body of journeymen.

I have given in rough outline some of the obvious conclusions forced upon us during our five years' experience, with the hope that they may be helpful to others, and suggestive of discussions. The smoothness with which this school has operated, after once becoming established, and the way in which it co-ordinates with all departments of the factory, is an unanswerable argument as to its practicability, and the unusual efficiency of the advanced apprentices makes it an immediate financial asset.

I hope that a school for the training of their own mechanics will be established by every large manufacturing concern in the country, and if the National Association of Corporation Schools can be instrumental in accomplishing this result, the question of vocational training in America is settled.

INDUSTRIAL EDUCATION IN ENGLAND

Extract from an article in "Vocational Education" (March) written by Mr. George Thompson. Headmaster, Trade Preparatory School, Toxteth Technical Institute, Liverpool, England.

The saddest feature of our English primary school system is the almost universal desire on the part of parents to take their children from school at the earliest possible legal school-leaving age, which is 14 years, thus flooding the juvenile labor market with an imperfectly educated horde of boys and girls all modeled in the same mold and none possessed of a training that fits him or her for one particular vocation before another. Further more, these juvenile nondescripts invariably are compelled to enter employment of an unedifying character, and those that eventually begin as apprentices in skilled trades at the usual age of 16 years are found to have deteriorated during the two years of casual labor. Any habits of study they may have acquired in their previous school life too often disappear altogether, and once lost these are not easily revived. Besides, both the children and their parents have grown accustomed to comparatively high wages, and will seldom reconcile themselves to the subsequent reduction which any sort of learnership to a trade necessarily involves. The boy and girl should be caught in the net of some skilled trade as he leaves school, otherwise, it is not much use endeavoring to catch him at all.

THE DECLINE OF COMPETITION

In a recent address, Dr. Charles P. Steinmetz said:

"Competition is dead as an industrial economic force and co-operation has taken its place. On the day when engineering increased the means of production of a commodity beyond the amount that could be consumed under existing conditions, competition ceased to be a progressive driving force and became a destructive force. The masses of people imagine that industrial consolidation is killing competition, while in reality the death of competition as a beneficent industrial force is the cause of consolidation."